CENTER ROUTING SLIP

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SECRET

NPIC/TDS-170/67
2 October 1967

MEMORANDUM FOR: Director, National Photographic Interpretation Center

THROUGH: Chief, Support Staff, NPIC

SUBJECT: FY-1968 R&D Project #02278 for an "Advanced 940 Light Table Prototype"

1. NPIC's FY-1968 R&D Program contains a project for the development of the Advanced 940 Light Table. The concept is to produce an optimized 9" x 40" light table incorporating in one unit the best features exhibited by two prototype light tables produced under previous (FY-65) contracts. This prototype would then serve as the model for manufacturing production quantities of this table. Funding amounting to [redacted] will be necessary for a contract to develop this prototype. 25X1

2. The Technical Development Staff has performed a rather extensive analysis of this project in terms of technical feasibility and operational desirability and we have come to the conclusion that there is an alternative approach to this development that will result in (1) superior equipment, (2) greater efficiency, and (3) considerable cost savings to the Government.

3. The proposed approach is to essentially build the prototype "in-house" in the following manner:

a. Start with a basic light table -- such as a [redacted] 940 MCE. 25X1

b. Procure superior component parts; e.g., [redacted] sources and [redacted] film holders, [redacted] focusing mechanisms, etc. A few of these items can be salvaged from our present prototypes, others will need to be purchased. 25X1 25X1 25X1

c. Retrofit these items in-house using various personnel currently available within the Technical Development Staff.

d. Operationally test and obtain acceptance from in-house operational personnel for each improvement as we proceed sequentially.

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e. When it is ascertained that we have an acceptable, superior table, engineering drawings and specifications will be drawn up in-house and distributed to industry for competitive bids.

4. We estimate that by using this approach the desired prototype table can be obtained for about [redacted] Thereby, realizing a cost savings of [redacted] if we were to continue with the original plan. 25X1 25X1

5. In order to implement this approach we would require approval to redistribute [redacted] of the original funds in the following manner: 25X1

a. [redacted] for purchase of component parts and subassemblies. (Transfer from R&D to Supplies) 25X1

b. [redacted] for technical services; i.e., machine shop work, electronic support, etc. (Transfer to Miscellaneous) 25X1

c. [redacted] for two or more very small R&D contracts for possible minor sub-systems; e.g., film drives, etc. (Transfer to Miscellaneous Service Contracts with [redacted] 25X1 25X1

6. We feel strongly that this approach is in the best interest of NPIC; it will be cheaper and should result in a better product with greater acceptance from the operational components. A more detailed description of the overall problem and the rational leading to our conclusions and recommendations is attached for your information.

[redacted] 25X1

Colonel, USAF
Assistant for Technical Development, NPIC

Attachments: a/s

APPROVED: [redacted] 25X1

ARTHUR C. LUNDAHL
Director
National Photographic Interpretation Center

Oct. 23, 1967
Date

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NPIC/TDS/D-1039-67
25 September 1967

MEMORANDUM FOR THE RECORD

SUBJECT: Advanced 940 Light Table, Proposed in-house Development Project

1. BACKGROUND

Practically all photo interpretation operations at NPIC require light tables. As a consequence, light tables are among the most used pieces of equipment in the Center. Although light tables have received considerable developmental effort, both here and within DOD, there currently is not a light table on the market truly acceptable to NPIC. The crux of the matter is that, although a light table in outward appearance is quite simple, internally it can be an extremely complex device with sophisticated variable speed automatic film drives and electronically controlled, variable intensity cold light sources. The "best" commercially available tables are currently
25X1 built by [redacted] however, these are not very acceptable in their present configuration. Modification of these units to acceptable standards is not a simple matter since [redacted] is generally quite 25X1
apathetic to external suggestions--to the extent that they will only accept Fixed Price contracts where they completely control the direction of the product. There are many logical reasons for this attitude from the company's standpoint. What this essentially means to us is that they will accept those modifications which are in line with their company policy and reject those that are not. As a result, our relationships with this company have been less than satisfactory. Our attempts to find competitors who are both technically knowledgeable and that produce reasonably priced equipment have not been successful to date. Toward this end, the Development Staff has recently completed a development program to produce an Advanced 940 light table. The Development program was not completely successful but it did result in the realization that only a slight deviation from the familiar, rather simple existing light table concept will be tolerated by the interpreters and that certain items incorporated in the advanced light tables built under our program are vastly superior to the existing [redacted] light table components. 25X1
25X1 [redacted] is not amenable to incorporating these superior design features into their new light tables. Therefore, an alternate approach must be found.

2. The following problems have been encountered in previous efforts to develop the subject light table on an external contract.

25X1 a. [redacted] equipment is not satisfactory, but it is the best available at the price.

SUBJECT: Advanced 940 Light Table, Proposed in-house Development Project

25X1 b. [redacted] is very hard to work with and not responsive to direction.

c. The only control we have over [redacted] is to cancel a contract or not deal with them. 25X1

d. They have a monopolistic position--our attempts to find (or even create) competition have not been successful.

e. This problem is intensified by the fact that even though their equipment is less than satisfactory they can be sold to DOD and even to our own (NPIC) operational components--over our objections. This greatly undercuts our bargaining power.

f. Photo interpreters are essentially conservative and like equipment they are used to. Any change from the familiar [redacted] concept will meet with considerable resistance at the operational level. 25X1

g. Competitive tables, though often better in many aspects, have been too complex, too massive, too expensive, and, above all, different.

3. Keeping these factors in mind, together with repeated suggestions from the operational components that pressure be brought to bear on [redacted] to greatly improve their product, it is recommended that an alternate approach be taken and that the Development Staff initiate an in-house project 25X1
25X1 to fabricate an improved [redacted] (or equivalent) light table. An in-house development is recommended since the vast improvement in light table's performance could be demonstrated through relatively minor design modifications, thereby simplifying our task of convincing the operational components and the remainder of the intelligence community to join together with us in putting
25X1 pressure on [redacted] to improve their designs. Describing the deficiencies
25X1 of [redacted] products has had little effect in the past and will continue to have the same effect until it is vividly demonstrated in hardware how simple and vast this improvement can actually be.

4. Analysis of this problem has resulted in our making the following recommendations:

a. That we conduct the project in-house using a team of available personnel from Development Staff, Equipment Performance Staff, and Exploratory Development Laboratory.

b. That we procure the best existing 940 Light Table [redacted] or equivalent) and use this as a base from which to work. 25X1

SUBJECT: Advanced 940 Light Table, Proposed in-house Development Project

c. That we modify the microscope transport, maintaining the current basic simple concepts but incorporating superior bearing systems such as the linear way of [redacted] 25X1
or the Dovetail Anti-Friction Bearing from [redacted] 25X1

d. That we change the nylon segmented film rollers to chrome plated or stainless steel rollers.

e. That we replace the existing [redacted] illumination source 25X1
25X1 with a vastly superior [redacted] source developed under our Advanced Light Table contract.

f. That we procure the new [redacted] motorized reel brackets 25X1
under an exacting performance specification including specifications covering film speed requirements, maximum noise levels, etc.

g. That we modify the electrical controls to simplify the operating procedures and place them in positions which are more consistent with good Human Engineering.

h. That we remove the existing external masking shades and add the internal shades developed by [redacted] on their advanced 25X1
light table development.

i. That we add a simple, mechanically stable reel bracket adjusting mechanisms to expedite reel bracket location when accommodating various film widths--conceptionally this feature would be similar to
25X1 that incorporated by [redacted] in our advanced light table development.

j. That we incorporate the vastly superior [redacted] 25X1
film handling mechanisms developed for us.

k. That we retrofit these items in-house using various personnel currently available within the Technical Development Staff.

l. That we then test them operationally and obtain acceptance from in-house operational personnel for each improvement as we proceed sequentially.

5. When we have ascertained that we now have a superior table design, engineering drawings and specifications will be produced in-house and distributed to industry for competitive bids, thus solving the [redacted] problem. 25X1
25X1 Even if [redacted] is low bidder and is awarded the contract for production units they will have to build our table to our specifications.

SUBJECT: Advanced 940 Light Table, Proposed in-house Development Project

6. It appears that this project could be substituted for our current FY-68 project for an Advanced 940 Light Table, Project #02278, with a considerable overall savings in cost resulting from carrying out the project in-house. In addition, some components may be salvaged from our previous developments resulting in further cost savings. In order to proceed with the implementation of this approach we would require approval to re-distribute the funds, currently assigned against #02278 in the 68 budget, into supply and miscellaneous service contracts. We feel strongly that this approach is in the best interest of NPIC; it will be cheaper and should result in a better product with greater acceptance from the operational components.

25X1

[redacted]

Chief, Exploitation Systems Branch, DS